

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re: Patent Application of :
Sean A. cCarthy, *et al.* :
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 :
Appln. No.: Not yet assigned :
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Filed: January 19, 2001 :
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For: NOVEL GENES ENCODING PROTEINS :
HAVING PROGNOSTIC, DIAGNOSTIC, :
PREVENTIVE, THERAPEUTIC, AND : Attorney Docket
OTHER USES: : No. 210147.0065/65US

**STATEMENT TO SUPPORT FILING AND SUBMISSION
IN ACCORDANCE WITH 37 CFR §§ 1.821 THROUGH 1.825**

- (X) I hereby state, in accordance with the requirements of 37 C.F.R. §1.821(f), that the contents of the paper and computer readable copies of the Sequence Listing, submitted in accordance with 37 C.F.R. §1.821(c) and (e), respectively are the same.

Respectfully submitted,

CHARLES REAY MACKAY, *ET AL.*

19 January 2001
(Date)

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Enclosures

SEQUENCE LISTING

<110> MCCARTHY, Sean A
 FRASER, Christopher C
 SHARP, John D
 BARNES, Thomas S
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 GOODEARL, Andrew
 HOLTZMAN, Douglas A
 KHODADOUST, Mehran M

<120> NOVEL GENES ENCODING PROTEINS HAVING PROGNOSTIC,
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<211> 1866

<212> DNA

<213> Homo sapiens

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<211> 622

<212> PRT

<213> Homo sapiens

<400> 23

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Ser Ser Val Cys Gln Leu Cys Thr Gly Arg Gln Ile Asn Cys Arg Asn
      35              40              45

Leu Gly Leu Ser Ser Ile Pro Lys Asn Phe Pro Glu Ser Thr Val Phe
      50              55              60

Leu Tyr Leu Thr Gly Asn Asn Ile Ser Tyr Ile Asn Glu Ser Glu Leu
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Thr Gly Leu His Ser Leu Val Ala Leu Tyr Leu Asp Asn Ser Asn Ile
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Leu Tyr Val Tyr Pro Lys Ala Phe Val Gln Leu Arg His Leu Tyr Phe
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Leu Phe Leu Asn Asn Asn Phe Ile Lys Arg Leu Asp Pro Gly Ile Phe
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Lys Gly Leu Leu Asn Leu Arg Asn Leu Tyr Leu Gln Tyr Asn Gln Val
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Ser Phe Val Pro Arg Gly Val Phe Asn Asp Leu Val Ser Val Gln Tyr
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Phe Leu Tyr Leu Thr Gly Asn Asn Ile Ser Tyr Ile Asn Glu Ser Glu			
35	40	45	
Leu Thr Gly Leu His Ser Leu Val Ala Leu Tyr Leu Asp Asn Ser Asn			
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Ile Leu Tyr Val Tyr Pro Lys Ala Phe Val Gln Leu Arg His Leu Tyr			
65	70	75	80
Phe Leu Phe Leu Asn Asn Asn Phe Ile Lys Arg Leu Asp Pro Gly Ile			
85	90	95	
Phe Lys Gly Leu Leu Asn Leu Arg Asn Leu Tyr Leu Gln Tyr Asn Gln			
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Val Ser Phe Val Pro Arg Gly Val Phe Asn Asp Leu Val Ser Val Gln			
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Tyr Leu Asn Leu Gln Arg Asn Arg Leu Thr Val Leu Gly Ser Gly Thr			
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Phe Val Gly Met Val Ala Leu Arg Ile Leu Asp Leu Ser Asn Asn Asn			
145	150	155	160
Ile Leu Arg Ile Ser Glu Ser Gly Phe Gln His Leu Glu Asn Leu Ala			
165	170	175	
Cys Leu Tyr Leu Gly Ser Asn Asn Leu Thr Lys Val Pro Ser Asn Ala			
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Phe Glu Val Leu Lys Ser Leu Arg Arg Leu Ser Leu Ser His Asn Pro
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Ile Glu Ala Ile Gln Pro Phe Ala Phe Lys Gly Leu Ala Asn Leu Glu
 210 215 220

Tyr Leu Leu Leu Lys Asn Ser Arg Ile Arg Asn Val Thr Arg Asp Gly
 225 230 235 240

Phe Ser Gly Ile Asn Asn Leu Lys His Leu Ile Leu Ser His Asn Asp
 245 250 255

Leu Glu Asn Leu Asn Ser Asp Thr Phe Ser Leu Leu Lys Asn Leu Ile
 260 265 270

Tyr Leu Lys Leu Asp Arg Asn Arg Ile Ile Ser Ile Asp Asn Asp Thr
 275 280 285

Phe Glu Asn Met Gly Ala Ser Leu Lys Ile Leu Asn Leu Ser Phe Asn
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Asn Leu Thr Ala Leu His Pro Arg Val Leu Lys Pro Leu Ser Ser Leu
 305 310 315 320

Ile His Leu Gln Ala Asn Ser Asn Pro Trp Glu Cys Asn Cys Lys Leu
 325 330 335

Leu Gly Leu Arg Asp Trp Leu Ala Ser Ser Ala Ile Thr Leu Asn Ile
 340 345 350

Tyr Cys Gln Asn Pro Pro Ser Met Arg Gly Arg Ala Leu Arg Tyr Ile
 355 360 365

Asn Ile Thr Asn Cys Val Thr Ser Ser Ile Asn Val Ser Arg Ala Trp
 370 375 380

Ala Val Val Lys Ser Pro His Ile His His Lys Thr Thr Ala Leu Met
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Met Ala Trp His Lys Val Thr Thr Asn Gly Ser Pro Leu Glu Asn Thr
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Glu Thr Glu Asn Ile Thr Phe Trp Glu Arg Ile Pro Thr Ser Pro Ala
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Gly Arg Phe Phe Gln Glu Asn Ala Phe Gly Asn Pro Leu Glu Thr Thr
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Ala Val Leu Pro Val Gln Ile Gln Leu Thr Thr Ser Val Thr Leu Asn
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Leu Glu Lys Asn Ser Ala Leu Pro Asn Asp Ala Ala Ser Met Ser Gly
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Lys Thr Ser Leu Ile Cys Thr Gln Glu Val Glu Lys Leu Asn Glu Ala
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Phe Asp Ile Leu Leu Ala Phe Phe Ile Leu Ala Cys Val Leu Ile Ile
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Phe Leu Ile Tyr Lys Val Val Gln Phe Lys Gln Lys Leu Lys Ala Ser
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Glu Asn Ser Arg Glu Asn Arg Leu Glu Tyr Tyr Ser Phe Tyr Gln Ser
530 535 540

Ala Arg Tyr Asn Val Thr Ala Ser Ile Cys Asn Thr Ser Pro Asn Ser
545 550 555 560

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Leu Thr Gly Leu His Ser Leu Val Ala Leu Tyr Leu Asp Asn Ser Asn
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Ile Leu Tyr Val Tyr Pro Lys Ala Phe Val Gln Leu Arg His Leu Tyr
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Phe Leu Phe Leu Asn Asn Asn Phe Ile Lys Arg Leu Asp Pro Gly Ile
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Phe Lys Gly Leu Leu Asn Leu Arg Asn Leu Tyr Leu Gln Tyr Asn Gln
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Val Ser Phe Val Pro Arg Gly Val Phe Asn Asp Leu Val Ser Val Gln
115 120 125

Tyr Leu Asn Leu Gln Arg Asn Arg Leu Thr Val Leu Gly Ser Gly Thr
130 135 140

Phe Val Gly Met Val Ala Leu Arg Ile Leu Asp Leu Ser Asn Asn Asn
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Ile Leu Arg Ile Ser Glu Ser Gly Phe Gln His Leu Glu Asn Leu Ala
165 170 175

Cys Leu Tyr Leu Gly Ser Asn Asn Leu Thr Lys Val Pro Ser Asn Ala
180 185 190

Phe Glu Val Leu Lys Ser Leu Arg Arg Leu Ser Leu Ser His Asn Pro
195 200 205

Ile Glu Ala Ile Gln Pro Phe Ala Phe Lys Gly Leu Ala Asn Leu Glu
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Tyr Leu Leu Leu Lys Asn Ser Arg Ile Arg Asn Val Thr Arg Asp Gly
225 230 235 240

Phe Ser Gly Ile Asn Asn Leu Lys His Leu Ile Leu Ser His Asn Asp
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Leu Glu Asn Leu Asn Ser Asp Thr Phe Ser Leu Leu Lys Asn Leu Ile
260 265 270

Tyr Leu Lys Leu Asp Arg Asn Arg Ile Ile Ser Ile Asp Asn Asp Thr
275 280 285

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Asn Leu Thr Ala Leu His Pro Arg Val Leu Lys Pro Leu Ser Ser Leu
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Ile His Leu Gln Ala Asn Ser Asn Pro Trp Glu Cys Asn Cys Lys Leu
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Leu Gly Leu Arg Asp Trp Leu Ala Ser Ser Ala Ile Thr Leu Asn Ile
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Tyr Cys Gln Asn Pro Pro Ser Met Arg Gly Arg Ala Leu Arg Tyr Ile
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Ala Val Val Lys Ser Pro His Ile His His Lys Thr Thr Ala Leu Met
 385 390 395 400

Met Ala Trp His Lys Val Thr Thr Asn Gly Ser Pro Leu Glu Asn Thr
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Glu Thr Glu Asn Ile Thr Phe Trp Glu Arg Ile Pro Thr Ser Pro Ala
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Gly Arg Phe Phe Gln Glu Asn Ala Phe Gly Asn Pro Leu Glu Thr Thr
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Ala Val Leu Pro Val Gln Ile Gln Leu Thr Thr Ser Val Thr Leu Asn
 450 455 460

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Phe Asp

<210> 27

<211> 18

<212> PRT

<213> Homo sapiens

<400> 27

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 35 40 45
 Val Pro Arg Asn Ile Pro Arg Asn Thr Glu Arg Leu Asp Leu Asn Gly
 50 55 60
 Asn Asn Ile Thr Arg Ile Thr Lys Thr Asp Phe Ala Gly Leu Arg His
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 85 90 95
 Gly Ala Phe Gln Asp Leu Lys Glu Leu Glu Arg Leu Arg Leu Asn Arg
 100 105 110

Asn His Leu Gln Leu Phe Pro Glu Leu Leu Phe Leu Gly Thr Ala Lys
 115 120 125

Leu Tyr Arg Leu Asp Leu Ser Glu Asn Gln Ile Gln Ala Ile Pro Arg
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Lys Ala Phe Arg Gly Ala Val Asp Ile Lys Asn Leu Gln Leu Asp Tyr
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Leu Glu Val Leu Thr Leu Asn Asn Asn Asn Ile Thr Arg Leu Ser Val
 180 185 190

Ala Ser Phe Asn His Met Pro Lys Leu Arg Thr Phe Arg Leu His Ser
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Asn Asn Leu Tyr Cys Asp Cys His Leu Ala Trp Leu Ser Asp Trp Leu
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His Leu Arg Gly His Asn Val Ala Glu Val Gln Lys Arg Glu Phe Val
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Cys Ser Gly His Gln Ser Phe Met Ala Pro Ser Cys Ser Val Leu His
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Lys Gly Leu Thr Glu Ile Pro Thr Asn Leu Pro Glu Thr Ile Thr Glu
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Ser Pro Tyr Lys Lys Leu Arg Arg Ile Asp Leu Ser Asn Asn Gln Ile
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Ser Pro Leu Arg Ala Ile Gln Thr Met His Leu Ala Gln Asn Pro Phe
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Glu Gly Thr Thr Val Asp Cys Ser Asn Gln Lys Leu Asn Lys Ile Pro
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Arg Lys Ile Asn Phe Ser Asn Asn Lys Ile Thr Asp Ile Glu Glu Gly
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Gln Ile Thr Thr Val Ala Pro Gly Ala Phe Asp Thr Leu His Ser Leu
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Pro Arg Cys Gln Lys Pro Tyr Phe Leu Lys Glu Ile Pro Ile Gln Asp
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Val Ala Ile Gln Asp Phe Thr Cys Asp Asp Gly Asn Asp Asp Asn Ser
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Cys Ser Pro Leu Ser Arg Cys Pro Thr Glu Cys Thr Cys Leu Asp Thr
725 730 735

Val Val Arg Cys Ser Asn Lys Gly Leu Lys Val Leu Pro Lys Gly Ile
740 745 750

Pro Arg Asp Val Thr Glu Leu Tyr Leu Asp Gly Asn Gln Phe Thr Leu
755 760 765

Val Pro Lys Glu Leu Ser Asn Tyr Lys His Leu Thr Leu Ile Asp Leu
770 775 780

Ser Asn Asn Arg Ile Ser Thr Leu Ser Asn Gln Ser Phe Ser Asn Met
785 790 795 800

Thr Gln Leu Leu Thr Leu Ile Leu Ser Tyr Asn Arg Leu Arg Cys Ile
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Pro Pro Arg Thr Phe Asp Gly Leu Lys Ser Leu Arg Leu Leu Ser Leu
820 825 830

His Gly Asn Asp Ile Ser Val Val Pro Glu Gly Ala Phe Asn Asp Leu
835 840 845

Ser Ala Leu Ser His Leu Ala Ile Gly Ala Asn Pro Leu Tyr Cys Asp
850 855 860

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Cys Pro Tyr Gly Phe Lys Gly Gln Asp Cys Asp Val Pro Ile His Ala
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Cys Ile Ser Asn Pro Cys Lys His Gly Gly Thr Cys His Leu Lys Glu
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Glu Asn Cys Glu Val Asn Val Asp Asp Cys Glu Asp Asn Asp Cys Glu
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Cys Asp Ile Asp Phe Asp Asp Cys Gln Asp Asn Lys Cys Lys Asn Gly
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Ala His Cys Thr Asp Ala Val Asn Gly Tyr Thr Cys Ile Cys Pro Glu
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Arg Thr Ser Pro Cys Asp Asn Phe Asp Cys Gln Asn Gly Ala Gln Cys
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Ile Val Arg Ile Asn Glu Pro Ile Cys Gln Cys Leu Pro Gly Tyr Gln
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Gly Glu Lys Cys Glu Lys Leu Val Ser Val Asn Phe Ile Asn Lys Glu
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Ser Tyr Leu Gln Ile Pro Ser Ala Lys Val Arg Pro Gln Thr Asn Ile
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Thr Leu Gln Ile Ala Thr Asp Glu Asp Ser Gly Ile Leu Leu Tyr Lys
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Gly Asp Lys Asp His Ile Ala Val Glu Leu Tyr Arg Gly Arg Val Arg
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Pro Gly Gln Asn Gly Thr Ser Phe His Gly Cys Ile Arg Asn Leu Tyr
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Ile Asn Ser Glu Leu Gln Asp Phe Gln Lys Val Pro Met Gln Thr Gly
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Ile Leu Pro Gly Cys Glu Pro Cys His Lys Lys Val Cys Ala His Gly
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Gly Asn Lys Cys Val His Gly Thr Cys Leu Pro Ile Asn Ala Phe Ser
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Tyr Ser Cys Lys Cys Leu Glu Gly His Gly Gly Val Leu Cys Asp Glu
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Glu Glu Asp Leu Phe Asn Pro Cys Gln Ala Ile Lys Cys Lys His Gly
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Lys Cys Arg Leu Ser Gly Leu Gly Gln Pro Tyr Cys Glu Cys Ser Ser
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Gly Tyr Thr Gly Asp Ser Cys Asp Arg Glu Ile Ser Cys Arg Gly Glu
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Arg Ile Arg Asp Tyr Tyr Gln Lys Gln Gln Gly Tyr Ala Ala Cys Gln
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Thr Thr Lys Lys Val Ser Arg Leu Glu Cys Arg Gly Gly Cys Ala Gly
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<212> DNA

<213> Homo sapiens

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<210> 31
<211> 3510
<212> DNA
<213> Homo sapiens

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<400> 31
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<210> 32

<211> 1530

<212> DNA

<213> Homo sapiens

<400> 32

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<210> 33
<211> 510
<212> PRT
<213> Homo sapiens

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<400> 33
Met Pro Leu Ser Leu Gly Ala Glu Met Trp Gly Pro Glu Ala Trp Leu
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Leu Leu Leu Leu Leu Leu Ala Ser Phe Thr Gly Arg Cys Pro Ala Gly
    20             25            30

Glu Leu Glu Thr Ser Asp Val Val Thr Val Val Leu Gly Gln Asp Ala
    35             40            45

Lys Leu Pro Cys Phe Tyr Arg Gly Asp Ser Gly Glu Gln Val Gly Gln
    50             55            60

Val Ala Trp Ala Arg Val Asp Ala Gly Glu Gly Ala Gln Glu Leu Ala
    65             70            75            80

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Leu	Leu	His	Ser	Lys	Tyr	Gly	Leu	His	Val	Ser	Pro	Ala	Tyr	Glu	Gly	85	90	95	
Arg	Val	Glu	Gln	Pro	Pro	Pro	Pro	Arg	Asn	Pro	Leu	Asp	Gly	Ser	Val	100	105	110	
Leu	Leu	Arg	Asn	Ala	Val	Gln	Ala	Asp	Glu	Gly	Glu	Tyr	Glu	Cys	Arg	115	120	125	
Val	Ser	Thr	Phe	Pro	Ala	Gly	Ser	Phe	Gln	Ala	Arg	Leu	Arg	Leu	Arg	130	135	140	
Val	Leu	Val	Pro	Pro	Leu	Pro	Ser	Leu	Asn	Pro	Gly	Pro	Ala	Leu	Glu	145	150	155	160
Glu	Gly	Gln	Gly	Leu	Thr	Leu	Ala	Ala	Ser	Cys	Thr	Ala	Glu	Gly	Ser	165	170	175	
Pro	Ala	Pro	Ser	Val	Thr	Trp	Asp	Thr	Glu	Val	Lys	Gly	Thr	Thr	Ser	180	185	190	
Ser	Arg	Ser	Phe	Lys	His	Ser	Arg	Ser	Ala	Ala	Val	Thr	Ser	Glu	Phe	195	200	205	
His	Leu	Val	Pro	Ser	Arg	Ser	Met	Asn	Gly	Gln	Pro	Leu	Thr	Cys	Val	210	215	220	
Val	Ser	His	Pro	Gly	Leu	Leu	Gln	Asp	Gln	Arg	Ile	Thr	His	Ile	Leu	225	230	235	240
His	Val	Ser	Phe	Leu	Ala	Glu	Ala	Ser	Val	Arg	Gly	Leu	Glu	Asp	Gln	245	250	255	
Asn	Leu	Trp	His	Ile	Gly	Arg	Glu	Gly	Ala	Met	Leu	Lys	Cys	Leu	Ser	260	265	270	
Glu	Gly	Gln	Pro	Pro	Pro	Ser	Tyr	Asn	Trp	Thr	Arg	Leu	Asp	Gly	Pro	275	280	285	
Leu	Pro	Ser	Gly	Val	Arg	Val	Asp	Gly	Asp	Thr	Leu	Gly	Phe	Pro	Pro	290	295	300	
Leu	Thr	Thr	Glu	His	Ser	Gly	Ile	Tyr	Val	Cys	His	Val	Ser	Asn	Glu	305	310	315	320
Phe	Ser	Ser	Arg	Asp	Ser	Gln	Val	Thr	Val	Asp	Val	Leu	Asp	Pro	Gln	325	330	335	

Glu Asp Ser Gly Lys Gln Val Asp Leu Val Ser Ala Ser Val Val Val
 340 345 350

Val Gly Val Ile Ala Ala Leu Leu Phe Cys Leu Leu Val Val Val Val
 355 360 365

Val Leu Met Ser Arg Tyr His Arg Arg Lys Ala Gln Gln Met Thr Gln
 370 375 380

Lys Tyr Glu Glu Glu Leu Thr Leu Thr Arg Glu Asn Ser Ile Arg Arg
 385 390 395 400

Leu His Ser His His Thr Asp Pro Arg Ser Gln Pro Glu Glu Ser Val
 405 410 415

Gly Leu Arg Ala Glu Gly His Pro Asp Ser Leu Lys Asp Asn Ser Ser
 420 425 430

Cys Ser Val Met Ser Glu Glu Pro Glu Gly Arg Ser Tyr Ser Thr Leu
 435 440 445

Thr Thr Val Arg Glu Ile Glu Thr Gln Thr Glu Leu Leu Ser Pro Gly
 450 455 460

Ser Gly Arg Ala Glu Glu Glu Glu Asp Gln Asp Glu Gly Ile Lys Gln
 465 470 475 480

Ala Met Asn His Phe Val Gln Glu Asn Gly Thr Leu Arg Ala Lys Pro
 485 490 495

Thr Gly Asn Gly Ile Tyr Ile Asn Gly Arg Gly His Leu Val
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<210> 34

<211> 31

<212> PRT

<213> Homo sapiens

<400> 34

Met Pro Leu Ser Leu Gly Ala Glu Met Trp Gly Pro Glu Ala Trp Leu
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Leu Leu Leu Leu Leu Leu Ala Ser Phe Thr Gly Arg Cys Pro Ala
 20 25 30

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Ser	Glu	Gly	Gln	Pro	Pro	Pro	Ser	Tyr	Asn	Trp	Thr	Arg	Leu	Asp	Gly		
			245						250					255			
Pro	Leu	Pro	Ser	Gly	Val	Arg	Val	Asp	Gly	Asp	Thr	Leu	Gly	Phe	Pro		
			260					265					270				
Pro	Leu	Thr	Thr	Glu	His	Ser	Gly	Ile	Tyr	Val	Cys	His	Val	Ser	Asn		
		275					280					285					
Glu	Phe	Ser	Ser	Arg	Asp	Ser	Gln	Val	Thr	Val	Asp	Val	Leu	Asp	Pro		
	290					295					300						
Gln	Glu	Asp	Ser	Gly	Lys	Gln	Val	Asp	Leu	Val	Ser	Ala	Ser	Val	Val		
305					310					315					320		
Val	Val	Gly	Val	Ile	Ala	Ala	Leu	Leu	Phe	Cys	Leu	Leu	Val	Val	Val		
				325					330					335			
Val	Val	Leu	Met	Ser	Arg	Tyr	His	Arg	Arg	Lys	Ala	Gln	Gln	Met	Thr		
			340					345					350				
Gln	Lys	Tyr	Glu	Glu	Glu	Leu	Thr	Leu	Thr	Arg	Glu	Asn	Ser	Ile	Arg		
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Arg	Leu	His	Ser	His	His	Thr	Asp	Pro	Arg	Ser	Gln	Pro	Glu	Glu	Ser		
	370					375					380						
Val	Gly	Leu	Arg	Ala	Glu	Gly	His	Pro	Asp	Ser	Leu	Lys	Asp	Asn	Ser		
385					390					395				400			
Ser	Cys	Ser	Val	Met	Ser	Glu	Glu	Pro	Glu	Gly	Arg	Ser	Tyr	Ser	Thr		
			405						410					415			
Leu	Thr	Thr	Val	Arg	Glu	Ile	Glu	Thr	Gln	Thr	Glu	Leu	Leu	Ser	Pro		
			420					425					430				
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		435					440					445					
Gln	Ala	Met	Asn	His	Phe	Val	Gln	Glu	Asn	Gly	Thr	Leu	Arg	Ala	Lys		
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Pro	Thr	Gly	Asn	Gly	Ile	Tyr	Ile	Asn	Gly	Arg	Gly	His	Leu	Val			
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Gly Glu Leu Glu Thr Ser Asp Val Val Thr Val Val Leu Gly Gln Asp
1 5 10 15

Gln Val Ala Trp Ala Arg Val Asp Ala Gly Glu Gly Ala Gln Glu Leu
35 40 45

Ala Leu Leu His Ser Lys Tyr Gly Leu His Val Ser Pro Ala Tyr Glu
50 55 60

Gly Arg Val Glu Gln Pro Pro Pro Pro Arg Asn Pro Leu Asp Gly Ser
65 70 75 80

Val Leu Leu Arg Asn Ala Val Gln Ala Asp Glu Gly Glu Tyr Glu Cys
85 90 95

Arg Val Ser Thr Phe Pro Ala Gly Ser Phe Gln Ala Arg Leu Arg Leu
100 105 110

Arg Val Leu Val Pro Pro Leu Pro Ser Leu Asn Pro Gly Pro Ala Leu
115 120 125

Glu Glu Gly Gln Gly Leu Thr Leu Ala Ala Ser Cys Thr Ala Glu Gly
130 135 140

Ser Pro Ala Pro Ser Val Thr Trp Asp Thr Glu Val Lys Gly Thr Thr
145 150 155 160

Ser Ser Arg Ser Phe Lys His Ser Arg Ser Ala Ala Val Thr Ser Glu
165 170 175

Phe His Leu Val Pro Ser Arg Ser Met Asn Gly Gln Pro Leu Thr Cys
180 185 190

Val	Val	Ser	His	Pro	Gly	Leu	Leu	Gln	Asp	Gln	Arg	Ile	Thr	His	Ile
		195					200					205			

Leu His Val Ser Phe Leu Ala Glu Ala Ser Val Arg Gly Leu Glu Asp
210 215 220

Gln Asn Leu Trp His Ile Gly Arg Glu Gly Ala Met Leu Lys Cys Leu
 225 230 235 240

Ser Glu Gly Gln Pro Pro Pro Ser Tyr Asn Trp Thr Arg Leu Asp Gly
 245 250 255

Pro Leu Pro Ser Gly Val Arg Val Asp Gly Asp Thr Leu Gly Phe Pro
 260 265 270

Pro Leu Thr Thr Glu His Ser Gly Ile Tyr Val Cys His Val Ser Asn
 275 280 285

Glu Phe Ser Ser Arg Asp Ser Gln Val Thr Val Asp Val Leu Asp Pro
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Gln Glu Asp Ser Gly Lys Gln Val Asp Leu
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<210> 37

<211> 25

<212> PRT

<213> Homo sapiens

<400> 37

Val Ser Ala Ser Val Val Val Val Gly Val Ile Ala Ala Leu Leu Phe
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Cys Leu Leu Val Val Val Val Val Leu
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<210> 38

<211> 140

<212> PRT

<213> Homo sapiens

<400> 38

Met Ser Arg Tyr His Arg Arg Lys Ala Gln Gln Met Thr Gln Lys Tyr
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 20 25 30

Ser His His Thr Asp Pro Arg Ser Gln Pro Glu Glu Ser Val Gly Leu
 35 40 45

Arg Ala Glu Gly His Pro Asp Ser Leu Lys Asp Asn Ser Ser Cys Ser
50 55 60

Val Met Ser Glu Glu Pro Glu Gly Arg Ser Tyr Ser Thr Leu Thr Thr
65 70 75 80

Val Arg Glu Ile Glu Thr Gln Thr Glu Leu Leu Ser Pro Gly Ser Gly
85 90 95

Arg Ala Glu Glu Glu Glu Asp Gln Asp Glu Gly Ile Lys Gln Ala Met
100 105 110

Asn His Phe Val Gln Glu Asn Gly Thr Leu Arg Ala Lys Pro Thr Gly
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<211> 897

<212> DNA

<213> Homo sapiens

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<210> 43

<211> 299

<212> PRT

<213> Homo sapiens

<400> 43

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 35 40 45

Ile Thr His Ile Leu His Val Ser Phe Leu Ala Glu Ala Ser Val Arg
 50 55 60

Gly Leu Glu Asp Gln Asn Leu Trp His Ile Gly Arg Glu Gly Ala Met
 65 70 75 80

Leu Lys Cys Leu Ser Glu Gly Gln Pro Pro Pro Ser Tyr Asn Trp Thr
 85 90 95

Arg Leu Asp Gly Pro Leu Pro Ser Gly Val Arg Val Asp Gly Asp Thr
 100 105 110

Leu Gly Phe Pro Pro Leu Thr Thr Glu His Ser Gly Ile Tyr Val Cys
 115 120 125

His Val Ser Asn Glu Phe Ser Ser Arg Asp Ser Gln Val Thr Val Asp
 130 135 140

Val Leu Ala Asp Pro Gln Glu Asp Ser Gly Lys Gln Val Asp Leu Val
 145 150 155 160

Ser Ala Ser Val Val Val Val Gly Val Ile Ala Ala Leu Leu Phe Cys
 165 170 175

Leu Leu Val Val Val Val Val Leu Met Ser Arg Tyr His Arg Arg Lys
 180 185 190

Ala Gln Gln Met Thr Gln Lys Tyr Glu Glu Glu Leu Thr Leu Thr Arg
 195 200 205

Glu Asn Ser Ile Arg Arg Leu His Ser His His Thr Asp Pro Arg Ser
 210 215 220

Gln Ser Glu Glu Pro Glu Gly Arg Ser Tyr Ser Thr Leu Thr Thr Val
 225 230 235 240

Arg Glu Ile Glu Thr Gln Thr Glu Leu Leu Ser Pro Gly Ser Gly Arg
 245 250 255

Ala Glu Glu Glu Glu Asp Gln Asp Glu Gly Ile Lys Gln Ala Met Asn
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<212> DNA
<213> Homo sapiens

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<210> 53
<211> 209
<212> PRT
<213> Homo sapiens

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Leu

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<210> 60
<211> 209
<212> PRT
<213> Mus sp.

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Phe Ile Ala Ser Cys Val Val Thr Tyr Gln Phe Ile Met Asp Gln Pro
35 40 45

Ser Arg Arg Leu Tyr Glu Leu His Thr Tyr His Ser Ser Leu Thr Cys
50 55 60

Phe Ser Glu Gly Thr Met Val Ser Glu Lys Met Trp Gly Cys Cys Pro
65 70 75 80

Asn His Trp Lys Ser Phe Gly Ser Ser Cys Tyr Leu Ile Ser Thr Lys
85 90 95

Glu Asn Phe Trp Ser Thr Ser Glu Gln Asn Cys Val Gln Met Gly Ala
 100 105 110

His Leu Val Val Ile Asn Thr Glu Ala Glu Gln Asn Phe Ile Thr Gln
 115 120 125

Gln Leu Asn Glu Ser Leu Ser Tyr Phe Leu Gly Leu Ser Asp Pro Gln
 130 135 140

Gly Asn Gly Lys Trp Gln Trp Ile Asp Asp Thr Pro Phe Ser Gln Asn
 145 150 155 160

Val Arg Phe Trp His Pro His Glu Pro Asn Leu Pro Glu Glu Arg Cys
 165 170 175

Val Ser Ile Val Tyr Trp Asn Pro Ser Lys Trp Gly Trp Asn Asp Val
 180 185 190

Phe Cys Asp Ser Lys His Asn Ser Ile Cys Glu Met Lys Lys Ile Tyr
 195 200 205

Leu

<210> 61

<211> 821

<212> DNA

<213> Mus sp.

<400> 61

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<211> 534
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 <213> Mus sp.

<400> 62
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<210> 63
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<400> 63
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 35 40 45
 Ser Arg Arg Leu Tyr Glu Leu His Thr Tyr His Ser Ser Leu Thr Cys
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 Phe Ser Glu Gly Thr Met Val Ser Glu Lys Met Trp Gly Cys Cys Pro
 65 70 75 80
 Asn His Trp Lys Ser Phe Gly Ser Ser Cys Tyr Leu Ile Ser Thr Lys
 85 90 95
 Glu Asn Phe Trp Ser Thr Ser Glu Gln Asn Cys Val Gln Met Gly Ala
 100 105 110
 His Leu Val Val Ile Asn Thr Glu Ala Glu Gln Asn Phe Ile Thr Gln
 115 120 125
 Gln Leu Asn Glu Ser Leu Ser Tyr Phe Leu Gly Leu Ser Asp Pro Lys
 130 135 140

Val Met Ala Asn Gly Asn Gly Ser Met Ile Leu Leu Ser Val Lys Met
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Ser Gly Ser Gly Thr Pro Met Asn Pro Ile Phe Gln Lys Ser Gly Val
 165 170 175

Phe Gln

<210> 64

<211> 48

<212> PRT

<213> Mus sp.

<400> 64

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Phe Ile Ala Ser Cys Val Val Thr Tyr Gln Phe Ile Met Asp Gln Pro
 35 40 45

<210> 65

<211> 130

<212> PRT

<213> Mus sp.

<400> 65

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Asn His Trp Lys Ser Phe Gly Ser Ser Cys Tyr Leu Ile Ser Thr Lys
 35 40 45

Glu Asn Phe Trp Ser Thr Ser Glu Gln Asn Cys Val Gln Met Gly Ala
 50 55 60

His Leu Val Val Ile Asn Thr Glu Ala Glu Gln Asn Phe Ile Thr Gln
 65 70 75 80

Gln Leu Asn Glu Ser Leu Ser Tyr Phe Leu Gly Leu Ser Asp Pro Lys
 85 90 95

Val Met Ala Asn Gly Asn Gly Ser Met Ile Leu Leu Ser Val Lys Met
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Ser Gly Ser Gly Thr Pro Met Asn Pro Ile Phe Gln Lys Ser Gly Val
 115 120 125

Phe Gln
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 <213> Mus sp.

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<210> 72
 <211> 627
 <212> DNA
 <213> Mus sp.

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agtctcacct gcttcagtga agggactatg gtgtcagaaa aaatgtgggg atgctgcca 240
aatcactgga agtcatttgg ctccagctgc tacctcattt ctaccaagga gaacttctgg 300
agcaccagtg agcagaactg tgttcagatg ggggtcctac tgggtgggat caatactgaa 360
gcggagcaga atttcatcac ccagcagctg aatgagtcac tttcttactt cctgggtctt 420
tcggatccac aaggtaatgg caaatggcaa tggatcgatg atactccttt cagtcaaat 480
gtcaggttct ggcaccccca tgaacccaat cttccagaag agcgggtgtg ttcaatagtt 540
tactggaatc cttcgaaatg gggctggaat gatgttttct gtgatagtaa acacaattca 600
atatgtgaaa tgaagaagat ttaccta 627

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<210> 73
 <211> 590
 <212> PRT
 <213> Mus sp.

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515

520

525

Tyr Thr Arg Pro Ala Ser Asn Ala Ser Pro Val Ala Leu Pro His Glu
530 535 540

Cys Tyr Ser Ala Ser Pro Ser Glu Arg Leu Tyr Ser His Ile Ser Ala
545 550 555 560

Ser Asn Ser Glu Arg Ile Leu Glu Cys Tyr Ser Gly Leu Met Glu Thr
565 570 575

Leu Tyr Ser Leu Tyr Ser Ile Leu Glu Thr Tyr Arg Leu Glu
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<210> 74

<400> 74

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<210> 75

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<210> 76

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<210> 81
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 <212> DNA
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 tgggaaagga tgtagcttc tcaggtttta aagtgtcctg gaggagaaga gaaaggacga 540
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 ggaggcagag attacagtga gccgagatca tgcccttgca ctctagcctg ggtgacagag 1140
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 gc 1202

<210> 82
 <211> 255
 <212> DNA
 <213> Homo sapiens

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 gcttgtgatg acattatttc taatagggaa tgggaaagga tgtagcttc tcaggtttta 180
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<210> 83
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 <212> PRT
 <213> Homo sapiens

<400> 83

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Trp Ala Phe Ile Trp Gly Gly His Val Ser Pro Thr Trp Asn Ser Glu
20 25 30

Pro Gly Gln Asp Ser Asn Leu Trp Ala Cys Asp Asp Ile Ile Ser Asn
35 40 45

Arg Glu Trp Glu Arg Met Leu Ala Ser Gln Val Leu Lys Cys Pro Gly
50 55 60

Gly Glu Glu Lys Gly Arg His Glu Lys Glu Thr Met Lys Lys Met Gly
65 70 75 80

Glu Gly Glu Ile Val
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<210> 84

<211> 23

<212> PRT

<213> Homo sapiens

<400> 84

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Trp Ala Phe Ile Trp Gly Gly
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<210> 85

<211> 62

<212> PRT

<213> Homo sapiens

<400> 85

His Val Ser Pro Thr Trp Asn Ser Glu Pro Gly Gln Asp Ser Asn Leu
1 5 10 15

Trp Ala Cys Asp Asp Ile Ile Ser Asn Arg Glu Trp Glu Arg Met Leu
20 25 30

Ala Ser Gln Val Leu Lys Cys Pro Gly Gly Glu Glu Lys Gly Arg His
35 40 45

Glu Lys Glu Thr Met Lys Lys Met Gly Glu Gly Glu Ile Val
50 55 60

100 105 110 115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570 575 580 585 590 595 600 605 610 615 620 625 630 635 640 645 650 655 660 665 670 675 680 685 690 695 700 705 710 715 720 725 730 735 740 745 750 755 760 765 770 775 780 785 790 795 800 805 810 815 820 825 830 835 840 845 850 855 860 865 870 875 880 885 890 895 900 905 910 915 920 925 930 935 940 945 950 955 960 965 970 975 980 985 990 995